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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/576,659
Filing Date: February 02, 2007
Appellant(s): MCCORMACK ET AL.

Terryence F. Chapman
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/07/2011 appealing from the Office action mailed 4/28/2011.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1, 27-32, 34, and 38-48 are pending and currently rejected. Claims 2-26, 33, and 35-37 have been canceled.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. Rejection of claims 46-48 under 35 U.S.C. 112, first paragraph as stated in paragraph 6 of the office action mailed 4/28/2011.

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

3,355,317	KEITH II, et al.	1967
2005/0066980	CROOKS et al.	2005
5,714,126	FRUND	1998

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims **1, 27-32, 34, and 38-48** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly added

limitation "having an extended life" does not appear to have been described in the specification.

2. Claims **1, 27-32, 34, and 38-48** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term "extended" in claims 1, 32, and 44 is a relative term which renders the claim indefinite. The term "extended" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In the instant case, there indication of the duration of "extended life" that would meet the claim.

4. Claims **1, 27-32, 34, and 38-48** are rejected under 35 U.S.C. 103(a) as being unpatentable over Keith II et al. (US 3,460,543) in view of Crooks et al. (US 20050066980) and Frund (US 5,714,126).

5. Regarding claims **1, 27-30, 32, 34, 38, 39, 42, and 43**, Keith II et al. disclose a cigarette with a cigarette filter containing 100-120 mg of an activated carbon absorbent with a particle size of around 50 mesh (0.297 mm; col. 6, 55-62) that is impregnated with 1-13% copper and 1-13% molybdenum (col. 2, 40-55; col. 4, 1-50) or other metals.

6. Keith II et al. do not disclose carbon tetrachloride activity of 90% or greater. However, Crooks et al. disclose a cigarette filter that includes activated carbon that is impregnated with metals and the activated carbon has a carbon tetrachloride activity of 60-150 (claim 16) and is between 8X16 and 30x70 mesh (claim 18). In addition, Frund

discloses using activated carbon with a carbon tetrachloride activity of at least 95 (col. 2, line 6).

7. It would have been obvious to one of ordinary skill in the art at the time of invention to use activated carbon with higher carbon tetrachloride activity (as taught by Crooks et al. or Frund) with the filter disclosed by Keith II et al. because the references are analogous art and teach using impregnated activated carbon in gas filters to remove harmful substances. In addition, one of ordinary skill would understand that activated carbon with a higher carbon tetrachloride activity would be able to absorb more unwanted compounds from smoke than activated carbon with a lower carbon tetrachloride activity.

8. Regarding claims **31, 44, and 45**, Keith II et al. do not disclose the claimed copper to molybdenum ratios (1.3 to 1 or 4 to 1) but do disclose amount of copper from 1-13 % and amounts of molybdenum from 1-13 % (col. 4, 1-11).

9. It would have been obvious to one of ordinary skill in the art at the time of invention to vary the amounts of the copper and molybdenum within the ranges disclosed by Keith II et al. in order to optimize the performance of the filter because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA).

10. Regarding claim **40**, Keith II et al. disclose that the adsorbent can also remove hydrogen sulfide (col. 3, 67-73).

11. Regarding claim **41**, Keith II et al. disclose that the filter is added to a cigarette with a wrapper and tobacco rod (see example 3).

Regarding claims **46-48**, as stated above, Keith II et al. teach copper from 1-13 % and amounts of molybdenum from 1-13 % and it would be obvious to optimize the ratio of the two metals and Crooks et al. teach activated carbon with carbon tetrachloride activities of 60-150%.

(10) Response to Argument

The responses have been grouped together below into the following categories:

(1) Written description and indefiniteness, (2) Unexpected Results, (3) Keith II et al., (4) Crooks et al., and (5) Frund.

(1) Written description and indefiniteness

The applicant argues that the support for the limitation, "extended life" can be found on page 7 and the quoted passage (see Appeal Brief 11/7/2011, page 4, second paragraph) and that the term is not new matter. The examiner disagrees. The disclosure of a product that, "does not deteriorate significantly even after storage for prolonged periods (e.g. six months)" does not equate to a product with "extended life". In particular, the term extended life implies that the life of the product is longer than comparable products. Instead the specification discloses that particular samples (those with carbon activities of 103 and 101% CTC, samples 8 and 11 respectively) have lower degradation rates compared with carbon that has not been impregnated and is of much lower activity. It is not clear based on the specification that the applicant was in

possession of a product that had an "extended life" in the broad scope that the term implies.

The applicant also argues that the term "extended", which means "drawn out in length especially of time" should not be considered indefinite based on its ordinary definition. The examiner disagrees. The rejection was not based on the lack of an ordinary definition of "extended" but that the meets and bounds cannot be determined. The specification discloses that samples 8 and 11 are not significantly reduced over six months compared to standard carbon, but one of ordinary skill would not be reasonably apprised that lower degradation over 6 months would equate to extended life.

(2) Unexpected Results

The applicant argues that the present invention produces unexpected results. First, the applicant argues that, "...since, Keith II et al. is the primary reference cited by the Examiner and the reference closest to the presently claimed invention, it is only necessary for Appellants to show unexpected results as compared to this reference." The examiner disagrees. There appears to be no legal basis for asserting that the only reference that the applicant must consider in relation to unexpected results should be the primary reference.

Second, the applicant argues that specific features of the invention are unexpected (hydrogen cyanide removal), however, these unexpected results are not commensurate in scope with the instant claims which do not specifically claim effects

(such as reduced hydrogen cyanide) or specific use ("tobacco smoke filter" is an intended use limitation present in the preamble of the claim).

Third, the data disclosed in the specification does not illustrate unexpected results due to the results indicated for sample 9. The applicant states, "With respect to Comparative sample reference 9, which has a carbon activity of 80% CTC and yet exhibits an extremely high selectivity for hydrogen cyanide, this is believed to be an anomaly or error..." (see Appeal Brief, page 7, first paragraph). The applicant has not provided any evidence to support the opinion that sample 9 is an error, and without such evidence the opinion of the applicant that this data point is an error is not persuasive. The presence of this data point shows that lower activity activated carbon can have high selectivity for hydrogen cyanide, thus not supporting arguments of unexpected results.

Fourth, the prior art as a whole indicates that one would expect higher adsorption of vapor phase components to flow naturally from activated carbon with increased measured activity. In particular, CTC activity is the adsorption of carbon tetrachloride, and one of ordinary skill in the art would expect that activated carbons that are capable of adsorbing more carbon tetrachloride would also be able to adsorb more of other types of gases, such as hydrogen cyanide. Therefore, the unexpected results that highly active activated carbons are better at adsorbing hydrogen cyanide would flow naturally from the knowledge that highly active activated carbons are more active for adsorbing gases.

(3) Keith II et al.

The applicant argues that Keith II et al. disclose a low activity carbon in an example and therefore one of ordinary skill would not consider using more highly active activated carbons. The examiner disagrees. Keith II, et al., disclose a minimum surface area (which is closely related to activity) but does not indicate a maximum surface area. Although the applicant extrapolates activity based on the examples of Keith II et al., the examples do not limit the disclosure of Keith II et al. because, "patents are relevant as prior art for all they contain", as discussed in MPEP 2123 (I). Furthermore, the applicant appears to be arguing the reference separately, as the examiner has admitted on the record that Keith II et al. do not disclose the activity claimed.

The applicant calculates a carbon tetrachloride activity based on a manufacturers specification (see Appeal Brief pages 7-8). This evidence has not been entered into the record and cannot be relied upon.

The applicant argues that "activity greater than 90% CTC" is not a generally understood term of art indicating that the activated carbon has a "high activity" (see Appeal Brief page 8). There appears to be no evidence to support the suggestion that the term "high activity" would mean "greater than 90% CTC" to one of ordinary skill in the art.

(4) Crooks et al.

The applicant argues that Crooks et al. do not disclose any particular advantage in using activated carbon with activities between 60% and 150% and disclose examples

with 85% activity, which illustrates that more highly activated carbons are not necessary. The examiner disagrees. In general, "patents are relevant as prior art for all they contain", as discussed in MPEP 2123 (I). Therefore, although the example discusses a carbon with a specific activity, the example does not limit the broader disclosure in the other portions of the specification. In addition, it would have been obvious to one of ordinary skill in reading Crooks et al., that using more highly active carbons would lead to higher adsorption (i.e. activity is a measurement of adsorption). Therefore, the range of Crooks et al. can be used as a teaching of the activities that can be used in the invention of Crooks et al.

(5) Frund

In response to applicant's argument that Frund is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Frund concerns the use of impregnated activated carbon to adsorb or treat gasses containing harmful chemicals, the same problem as the prior art of reference in the cigarette filter art. Regardless of the differences pointed out between the air filter/gas mask art and cigarette filter art, one of ordinary skill would be aware of the significant overlap in the problems faced and the materials and techniques used in both of these fields.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/MICHAEL J FELTON/

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